

# PATENT ABSTRACTS OF JAPAN

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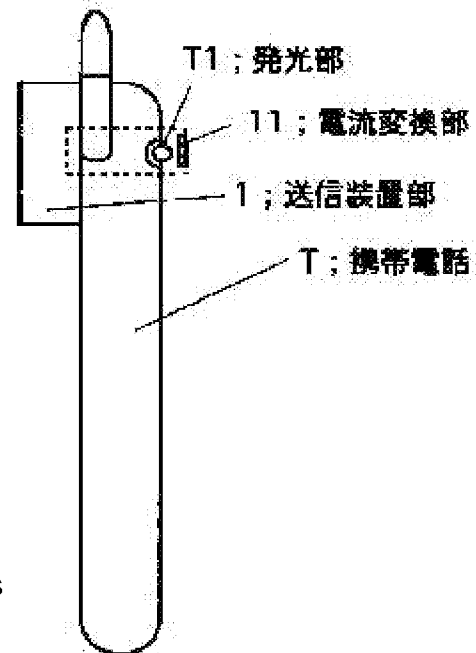
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## (54) NOTIFICATION SYSTEM FOR ARRIVAL OF INCOMING CALL TO MOBILE TELEPHONE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a notification system for the arrival of an incoming call to a mobile telephone that can inform a user about the arrival of an incoming call by means of vibration even when the mobile telephone is placed apart from the user.

SOLUTION: The notification system is provided with a transmitter section 1 that detects a light emitted from the mobile telephone T having a light emitting section T1 emitting the light at the arrival of an incoming call, converts the detected optical signal into a current and transmits a signal and with a receiver section that drives a vibrator by receiving the signal and is manufactured as a separate unit from the transmitter section. Mounting the receiver section receiving the signal sent by the transmitter section that detects the light emitted light from the light emitting section at the arrival of an incoming call and transmits the signal to vibrate the vibrator on e.g. the wrist of the user allows the user to sense the arrival of an incoming call even when the user is resident at a place apart from the mobile telephone.



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## CLAIMS

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[Claim(s)]

[Claim 1]A cellular-phone incoming call notice device comprising:

A sending set part which detects said luminescence of a cellular phone which has a light-emitting part which emits light when a message is received, changes said detected lightwave signal into current, and transmits a signal.

Said sending set part and a receiving set part manufactured by different body which make a vibrator drive in response to said signal.

[Claim 2]It has ID control circuit which adds ID information beforehand set as a signal transmitted from said sending set part, The cellular-phone incoming call notice device according to claim 1 having a comparison test circuit which emits a driving signal to a vibrator only when the same in a receiving set part which receives this signal as compared with said ID information set up beforehand.

[Claim 3]A receiving module which is formed in a sending set part characterized by comprising the following, and this sending set part and different body, and receives a pulse signal from said transmitting module and to which it restores in a converted pulse sequence, A comparison test circuit which judges whether ID train of impulses added to said converted pulse sequence is the same as ID set up with said receiving ID setting machine to be a receiving ID setting machine which sets up said ID similarly to a sending set part, and emits a driving signal when the same, A cellular-phone incoming call notice device having the receiving set part which has a means to vibrate a vibrator in response to said driving signal.

A current conversion part which detects said luminescence of a cellular phone which has a light-emitting part which emits light when a message is received, and changes said detected lightwave signal into current.

A transmitting ID setting machine which sets up ID.

ID control circuit which changes into a train of impulses a signal changed in said current conversion part, and is added to said converted pulse sequence by making ID information of said set-up ID into ID train of impulses.

A transmitting module which transmits a converted pulse sequence to which said ID train of impulses was added as a pulse signal.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application]This invention relates to a cellular-phone incoming call notice device and the cellular-phone incoming call notice device which can notify the arrival of a cellular phone in the position which separated more particularly.

[0002]

[Conventional technology and a problem] When a message is received in a cellular phone, a notice is performed by uttering a sound, or a cellular phone's vibrating and perceiving the vibration conventionally. For example, when performing sports, such as a pool, sea bathing, and tennis, the cellular phone is not attached to the body in many cases. Since the place which performs a sport is a public place in many cases, in such a case, it is preferred to stop the notice by a ringer tone and to operate the notice by vibration.

[0003]However, when a sound is uttered, even if it is in the position which a cellular phone and its user left, the user can know having got the telephone call to the notice sound, but when based on vibration, unless the user has attached the cellular phone to the body, there is a fault that mail arrival cannot be perceived.

[0004]This invention is made in view of an above-mentioned problem, and it aims at providing the cellular-phone incoming call notice device in which the incoming call notice by vibration is possible, also when the cellular phone and the user are separated.

[0005]

[Means for Solving the Problem]In order to solve the above-mentioned problem, a cellular-phone incoming call notice device by this invention, It has a sending set part which detects said luminescence of a cellular phone which has a light-emitting part which emits light when a message is received, changes said detected lightwave signal into current, and transmits a signal, and said sending set part and a receiving set part manufactured by different body which

make a vibrator drive in response to said signal.

[0006]By according to this invention, detecting luminescence of a light-emitting part, when a message is received, and equipping a wrist etc. with a receiving set part which vibrates a vibrator in response to a signal transmitted by sending set part which transmits a signal, for example, Also when it is in a cellular phone and a distant place, there is an advantage that mail arrival can be perceived. Unless ID information is in agreement by adding ID information to a sending signal, there is an advantage that it is able to make it not to make a vibrator drive, and it can make to cause malfunction into the minimum.

[0007]

[Example]Although drawing 1 is a side view of the cellular phone T, the light-emitting part T1 for generally telling mail arrival is formed in this cellular phone T. This light-emitting part T1 carries out blink luminescence, when there is mail arrival. In this invention, such a cellular phone T is equipped with the sending set part 1, for example by the band B and the velvet type fastener F. And luminescence is detected in the position corresponding to said light-emitting part T1, and the photo-transistor (current conversion part) 11 which changes said detected lightwave signal into current is formed (refer to drawing 1 and drawing 2).

[0008]As a block diagram is shown in drawing 3, such a sending set part 1 detects luminescence, and has the low pass filter 12 which removes the high frequency component of the current changed by the photo-transistor 11 which changes said detected lightwave signal into current, and this photo-transistor 11.

Said fabricated electrical signal is inputted into the ID control circuit 14 through Schmidt 13 who fabricates a waveform.

[0009]The transmitting ID setting machine 15 has connected with this ID control circuit 14. Setting out of this ID setting machine is arbitrarily attained in the user's ID.

This ID can be set up, for example at 8 bits, and can set up ID from which 255 differs in this case.

[0010]said ID control circuit 14 should pass said Schmidt 13 -- the inputted electrical signal -- a train of impulses -- changing (converted pulse sequence) -- the operation which adds ID set up with said transmitting ID setting machine 15 as a train of impulses (ID train of impulses) to the head part of said converted pulse sequence is performed.

[0011]Thus, the converted pulse sequence to which it was changed into the train of impulses in the ID control circuit 14, and ID train of impulses was added is sent to the transmitting module 16. This transmitting module 16 transmits the converted pulse sequence to which ID train of impulses was added as a pulse signal. V+ shows the power supply (cell).

[0012]On the other hand, the receiving set part 2 has the vibrator 21, as shown in drawing 4. When said vibrator 21 vibrates, an incoming call notice is possible and it has come.

A wrist etc. are equipped with said receiving set part 2 by the band and the velvet type fastener F, for example.

[0013]Such a receiving set part 2 has the receiving module 22, as shown in drawing 5.

The pulse signal transmitted from said transmitting module 16 is received, and it gets over in the converted pulse sequence to which ID train of impulses was added.

The converted pulse sequence to which it restored in this way is inputted into the ID comparison decision circuit 23. The receiving ID setting machine 24 is formed in this example, and setting out has become possible about ID. In this case, the receiving ID setting machine 24 is set as the same ID as ID set up with the transmitting ID setting machine 15.

[0014]Said ID comparison decision circuit 23 compares ID train of impulses added to the head of the converted pulse sequence with ID train of impulses set up with said receiving ID setting machine 24, and when in agreement, it outputs a driving signal.

[0015]When a driving signal is outputted, the transistor 25 is turned on and the vibrator 21 vibrates. Since a driving signal is not sent when not in agreement, the vibrator 21 does not vibrate. 26 is current infinite resistance and a diode for overcurrent protections in 27. V+ shows the power supply (cell).

[0016]

[Effect of the Invention]As explained above, according to the cellular-phone incoming call notice device by this invention, the sending set part and the receiving set part comprise a different body. And while a sending set part changes mail arrival luminescence into a signal and transmitting to a receiving set part, in order that a receiving set part may operate a vibrator in response to said signal, also in the case where it is in the position which the cellular phone and the user left, there is an advantage that an incoming call notice is possible, by vibration.

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[Translation done.]

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**TECHNICAL FIELD**

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**EFFECT OF THE INVENTION**

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**TECHNICAL PROBLEM**

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**MEANS**

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1]A side view when a cellular phone is equipped with a sending set part.

[Drawing 2]The perspective view of an example of a sending set part.

[Drawing 3]The block diagram showing the composition of a sending set part.

[Drawing 4]The perspective view of an example of a receiving set part.

[Drawing 5]The block diagram showing the composition of a receiving set part.

[Description of Notations]

1 Sending set part

11 Photo-transistor (current conversion part)

14 ID control circuit

15 Transmitting ID setting machine

16 Transmitting module

2 Receiving set part

21 Vibrator

22 Receiving module

23 ID comparison decision circuit

24 Receiving ID setting machine

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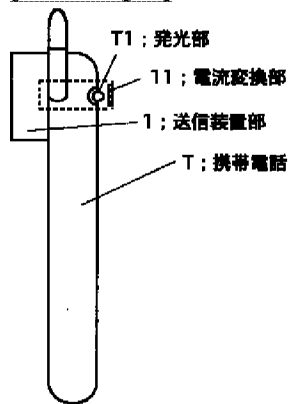
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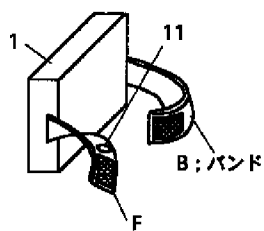
**DRAWINGS**

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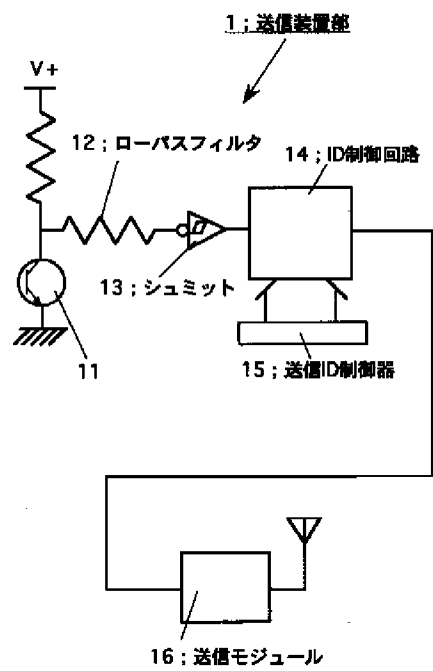
[Drawing 1]



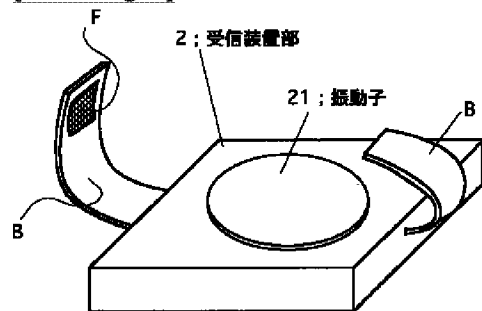
[Drawing 2]



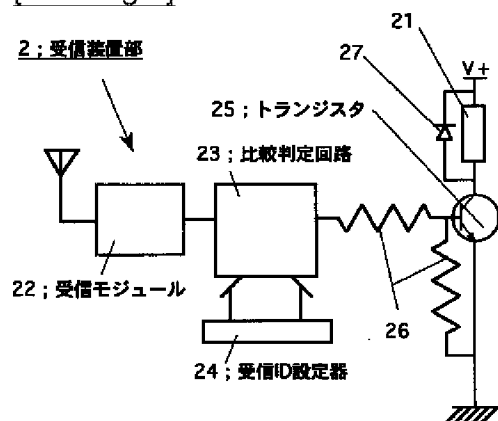
[Drawing 3]



[Drawing 4]



[Drawing 5]



[Translation done.]